

Application No. 10/601,140  
Amendment dated November 28, 2006  
Reply to Office Action of June 30, 2006

23

Docket No.: 57764(71994)

### **REMARKS**

Claims 1-140 are pending in the case. Claims 10-12 and 138 have been cancelled. Claims 23-24, 81-89, 94-109, and 120-126 are withdrawn as being drawn to a non-elected invention. Claims 1-3, 9-11, 13-15, 17, 22, 25-28, 31-34, 37-38, 42-43, 45-47, 55, 58, 92-93, 110-119, and 127-135 are amended. Claims 1-22, 25-80, 90-93, 110-119, and 127-140 stand rejected, and claims 9, 17, 55, 92, and 138 are objected to. After entry of the amendment, claims 1-9, 13-22, 25-80, 90-93, 110-119, 127-137, and 139-140 will be under prosecution.

Applicants thank the Examiner for the careful analysis of the specification and claims. Applicants submit that in view of the forgoing amendments and following comments, the application is now in proper form for allowance.

#### *Election/Restriction*

The Examiner has maintained the restriction of the claims. Claims 81-89, 94-109 and 120-126 are directed to the non-elected invention are withdrawn as set forth above. Claims 22, 25, and 26 have been amended to limit the scope to Compound 3, where appropriate. As claim 23 is not drawn to SEQ ID NO 3 or Compound 3, it has also been withdrawn. Applicants reserve the right to pursue the non-elected matter in one or more divisional or continuation applications.

#### *Objections*

Claims 87 to 135 were misnumbered as indicated by the Examiner. Corrective amendments were made by the Examiner. These corrections made by the Examiner are not indicated in the version of the amended claims set forth above as it is believed that they were already entered into the record. Applicants believe that such an amendment is fully responsive. If a correction of formalities of the response is required, Applicants request that detailed instructions be provided by the Examiner and that correction requirements will be held in abeyance until issuance of the next Office Communication.

Application No. 10/601,140  
Amendment dated November 28, 2006  
Reply to Office Action of June 30, 2006

24

Docket No.: 57764(71994)

Claims 9, 17, 55, 92, and 138 were objected to for informalities. The informalities have been amended to remove the typographical errors from claims 9, 17, 55, and 92. Claim 138 has been cancelled. Applicants submit that the amendments do not alter the scope of the claims and that in view of the amendments, the objections to claims 9, 17, 55, 92, and 138 are overcome. Accordingly, Applicants request the withdrawal of the objections.

**35 U.S.C. §112**

The Examiner has rejected claims 9-15, 22, 27-29, 33-34, 37-38, 42-43, 45-47, 58-59, 113, and 117 under 35 U.S.C. §112, ¶2 for being indefinite and failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention.

The Examiner states that claim 9 is indefinite by the recitation of "a homopolymeric nucleotide." Applicants have amended the claim to recite a "homopolymeric nucleotide sequence," making the claim definite and overcoming the rejection.

The Examiner states that claims 9-15, 27-29, 33-34 and 45-47 are indefinite for the recitation of "at least about" in the claims. The Applicants have removed the word "about" from the phrase "about at least" at each of the occurrences in the claims currently under examination, specifically in claims 9, 13, 15, 27-28, 31-34, 41, and 45-47. Applicants submit that the claim is now definite and that the rejection is overcome.

The Examiner states that claim 22 is indefinite in the recitation "the LNA-biotin-TtTtTtTtTtTtTtTt" as claim 22 is dependent on claim 18. Claim 22 has been amended to correct the typographical error and the dependency of the claim. Similarly, the dependencies of claims 25 and 26 have also been amended to correct the same error. Applicants submit that the claim is now definite and that the rejection is overcome.

Application No. 10/601,140  
Amendment dated November 28, 2006  
Reply to Office Action of June 30, 2006

25

Docket No.: 57764(71994)

The Examiner states that claim 37 is indefinite for recitation of "the association constant ( $K_a$ ) of the LNA oligonucleotide is higher." The claim has been amended to recite "an association constant ( $K_a$ ) of the LNA oligonucleotide to a complementary strand is higher than the association constant of complementary strands of a double stranded molecule containing no LNA." This amendment is supported throughout the specification, for example on page 28, lines 31 to 33. The term  $K_a$  is the common abbreviation for association constant, as shown on page 6, line 21 of the specification, and is in parenthesis as is common practice. It does not provide an additional limitation of the claim as would be understood by those skilled in the art familiar with common abbreviations. Applicants submit that the claim is now definite and that the rejection is overcome.

The Examiner states that claim 38 is indefinite for reasons similar to those set forth above for claim 37. Claim 38 has been amended to recite "an association constant of the LNA oligonucleotide to a complementary strand is higher than the disassociation constant ( $K_d$ ) of complementary strands of the target sequence in a double stranded molecule containing no LNA." This amendment is supported throughout the specification, for example on page 28, lines 31 to 33. The term  $K_d$  is the common abbreviation for association constant, as shown on page 6, line 26 of the specification, and is in parenthesis as is common practice. It does not provide an additional limitation of the claim as would be understood by those skilled in the art familiar with common abbreviations. Applicants submit that the claim is now definite and that the rejection is overcome.

The Examiner states that claim 42 is indefinite in the recitation of "the fluorescent signal" and has suggested an amendment of "the" to "a." Applicants have amended the claim to reflect proper antecedent basis. Moreover, Applicants submit that detection of a single fluorophore is well known to those skilled in the art.

The Examiner states that claims 43 and 113 are indefinite for the recitation of "the  $T_m$ " and suggests that "the" be changed to "a". Applicants have amended the claims to reflect proper antecedent basis, overcoming the rejection.

Application No. 10/601,140  
Amendment dated November 28, 2006  
Reply to Office Action of June 30, 2006

26

Docket No.: 57764(71994)

The Examiner states that claim 58 is indefinite due to the use of the conjunction "or" in a number of places in the claim. Applicants have amended the claim as set forth above to remove the word "or" to more clearly define the relationship between the complementary overhang, the free arm in a dendrimer, and fluorochrome molecules. Applicants submit that the claim is now definite and that the rejection is overcome.

The Examiner states that claim 59 is indefinite for the recitation of "the sample." Claim 59 is now dependent on claim 1. This amendment is supported by the claims in the PCT application wherein claim 59 was originally multiply dependent on claims 1 to 58. Claim 1 provides proper antecedent basis for "the sample." Applicants submit that the claim is now definite and that the rejection is overcome.

The Examiner states that claims 110-119 are indefinite in claim 110 for the recitation of "the components" and "the capturing probe." Claim 110 has been amended as set forth above to recite "cellular components", eliminating the word "the", and the phrase "capturing probe" has been deleted. Applicants submit that the claims are now definite and that the rejection is overcome.

The Examiner states that claim 117 is indefinite for the recitation of "the retrovirus." Claim 116 has been amended to recite "a retrovirus" rather than "retroviruses." Support for a single virus is found in claim 117 as filed. With the amendment of claim 116, "the retrovirus" in claim 116 reflects proper antecedent basis. Applicants submit that the claim is now definite and that the rejection is overcome.

In view of the forgoing amendments arguments, Applicants submit that all of the claims are now definite and request that the rejection of claims 9-15, 22, 27-29, 33-34, 37-38, 42-43, 45-47, 58-59, 113, and 117 under 35 U.S.C. §112, ¶2 be withdrawn.

Application No. 10/801,140  
Amendment dated November 28, 2006  
Reply to Office Action of June 30, 2006

27

Docket No.: 57764(71994)

**35 U.S.C. §102**

The Examiner has rejected claims 1-3, 5-11, 16, 18-21, 27, 29, 30, 33-43, 53-54, 74-76, and 91-92 under 35 U.S.C. §102 for being anticipated by Wengel et al (WO99/14226).

Claims 1-3 and 92, the independent claims in the rejection, have been amended to include the limitation of claim 12, which is not included in the rejection. Moreover, the claims have been amended to include the limitation of the sample being treated in a buffer comprising a chaotropic agent, which is analogous to the limitation of claim 4, which is also not included in the rejection. Therefore, the newly amended claims 1-3 and 92 are not anticipated by Wengel. As the remaining claims in the rejection are all dependent, either directly or indirectly on the now allowable independent claims, they are also not anticipated by Wengel. Therefore, the rejection of claims 1-3, 5-11, 16, 18-21, 27, 29, 30, 33-43, 53-54, 74-76, and 91-92 under 35 U.S.C. §102 is overcome. Withdrawal of the rejection for anticipation is respectfully requested.

**35 U.S.C. §103(a)**

The Examiner has rejected claims 1, 12-15, and 17 under 35 U.S.C. §103(a) as being unpatentable over Wengel in view of Monteforte et al. (US Patent 6,051,378). Applicants have amended claim 1 as set forth above to incorporate a limitation of the sample being treated in a buffer comprising a chaotropic agent, which is analogous to the limitation of claim 4, which is not included in the rejection. Therefore, the newly amended claim 1 is not obvious over Wengel in view of Monteforte. As the remaining claims in the rejection are all dependent, either directly or indirectly on the now allowable claim 1, they are also not obvious over Wengel in view of Monteforte. Therefore, the rejection of claims 1, 12-15, and 17 under 35 U.S.C. §103(a) is overcome.

Application No. 10/601,140  
Amendment dated November 28, 2006  
Reply to Office Action of June 30, 2006

28

Docket No.: 57764(71994)

The Examiner has rejected claims 1, 2, 4, 22, 25-26, 28, 44-52, and 127-135 under 35 U.S.C. §103(a) as being unpatentable over Wengel in view of Skouv (US Patent 6,303,315). Applicants have amended claims 1 and 2 to include the limitations of claim 12, which is not included in the rejection. Therefore, the newly amended claims 1-2 are not obvious over Wengel in view of Skouv. As the remaining claims in the rejection are all dependent, either directly or indirectly on the now allowable claim 1 or 2, they are also not obvious over Wengel in view of Skouv. Therefore, the rejection of claims 1, 2, 4, 22, 25-26, 28, 44-52, and 127-135 under 35 U.S.C. §103(a) is overcome.

The Examiner has rejected claims 1, 55-56, 58, 59, 64-67, and 139 under 35 U.S.C. §103(a) as being unpatentable over Wengel. Claim 1, the independent claim in the rejection, has been amended to include the limitation of claim 12, which is not included in the rejection. Moreover, the claim has been amended to include the limitation of the sample being treated in a buffer comprising a chaotropic agent, which is analogous to the limitation of claim 4, which is also not included in the rejection. Therefore, the newly amended claim 1 is not obvious over Wengel. As the remaining claims in the rejection are all dependent, either directly or indirectly on the now allowable independent claim 1, they are also not obvious over Wengel. Therefore, the rejection of claims 1, 55-56, 58, 59, 64-67, and 139 under 35 U.S.C. §103(a) is overcome.

The Examiner has rejected claim 57 under 35 U.S.C. §103(a) as being unpatentable over Wengel further in view of Bowbrow (US Patent 5,731,158). Claim 57 is dependent on Claim 1. Claim 1 has been amended to include the limitation of claim 12, the limitations of which are not taught or suggested by the references. Moreover, the claim has been amended to include the limitation of the sample being treated in a buffer comprising a chaotropic agent, which is analogous to the limitation of claim 4, the limitations of which are not taught or suggested by the references. Therefore, claim 57 is not obvious over Wengel in view of Bowbrow and the rejection of claim 57 under 35 U.S.C. §103(a) is overcome.

Application No. 10/601,140  
Amendment dated November 28, 2006  
Reply to Office Action of June 30, 2006

29

Docket No.: 57764(71994)

The Examiner has rejected claims 60-61, 69-70, and 73 under 35 U.S.C. §103(a) as being unpatentable over Wengel in view of Eberwine (US Patent 5,514,545). Claims 60-61, 69-70 and 73 are dependent on Claim 1. Claim 1 has been amended to include the limitation of claim 12, the limitations of which are not taught or suggested by the references. Moreover, the claim has been amended to include the limitation of the sample being treated in a buffer comprising a chaotropic agent, which is analogous to the limitation of claim 4, the limitations of which are not taught or suggested by the references. Therefore, claims 60-61, 69-70, and 73 are not obvious over Wengel in view of Eberwine and the rejection of claims 60-61, 69-70, and 73 under 35 U.S.C. §103(a) is overcome.

The Examiner has rejected claims 59-60, 62-63, 68 and 72 under 35 U.S.C. §103(a) as being unpatentable over Wengel in view of Gruenert (US Patent 5,804,383). Claims 59-60, 62-63, 68 and 72 are dependent on Claim 1. Claim 1 has been amended to include the limitation of claim 12, the limitations of which are not taught or suggested by the references. Moreover, the claim has been amended to include the limitation of the sample being treated in a buffer comprising a chaotropic agent, which is analogous to the limitation of claim 4, the limitations of which are not taught or suggested by the references. Therefore, claims 59-60, 62-63, 68 and 72 are not obvious over Wengel in view of Gruenert and the rejection of claims 59-60, 62-63, 68 and 72 under 35 U.S.C. §103(a) is overcome.

The Examiner has rejected claim 71 under 35 U.S.C. §103(a) as being unpatentable over Wengel in view of Eberwine, further in view of Eis (Nature Biotechnology, 2001). Claim 71 is dependent on Claim 1. Claim 1 has been amended to include the limitation of claim 12, the limitations of which are not taught or suggested by the references. Moreover, the claim has been amended to include the limitation of the sample being treated in a buffer comprising a chaotropic agent, which is analogous to the limitation of claim 4, the limitations of which are not taught or suggested by the references. Therefore, claim 71 is not obvious over Wengel in view of Eberwine, further in view of Eis and the rejection of claim 71 under 35 U.S.C. §103(a) is overcome.

Application No. 10/601,140  
Amendment dated November 28, 2006  
Reply to Office Action of June 30, 2006

30

Docket No.: 57764(71994)

The Examiner has rejected claims 77-80 and 140 under 35 U.S.C. §103(a) as being unpatentable over Wengel further in view of Sambrook et al (*Molecular Cloning, A Laboratory Manual*, 2<sup>nd</sup> Ed. Cold Spring Harbor Laboratory Press, 1989). Claims 77-80 and 140 are dependent on Claim 1. Claim 1 has been amended to include the limitation of claim 12, the limitations of which are not taught or suggested by the references. Moreover, the claims have been amended to include the limitation of the sample being treated in a buffer comprising a chaotropic agent, which is analogous to the limitation of claim 4, the limitations of which are not taught or suggested by the references. Therefore, claims 77-80 and 140 are not obvious over Wengel further in view of Sambrook and the rejection of claims 77-80 and 140 under 35 U.S.C. §103(a) is overcome.

The Examiner has rejected claims 1, 54, and 140 under 35 U.S.C. §103(a) as being unpatentable over Wengel in view of Gottschling et al (US Patent 5,916,752). Claim 1, the independent claim in the rejection, has been amended to include the limitation of claim 12, which is not included in the rejection. Moreover, the claim has been amended to include the limitation of the sample being treated in a buffer comprising a chaotropic agent, which is analogous to the limitation of claim 4, which is also not included in the rejection. Therefore, the newly amended claim 1 is not obvious over Wengel in view of Gottschling. As the remaining claims in the rejection are all dependent, either directly or indirectly on the now allowable independent claim 1, they are also not obvious over Wengel in view of Gottschling. Therefore, the rejection of claims 1, 54, and 140 under 35 U.S.C. §103(a) is overcome.

The Examiner has rejected claims 92 and 93 under 35 U.S.C. §103(a) as being unpatentable over Wengel in view of Recker et al (US Patent 5,691,153). Claim 92, the independent claim in the rejection, has been amended to include the limitation of claim 12, which is not included in the rejection. Moreover, the claim has been amended to include the limitation of the sample being treated in a buffer comprising a chaotropic agent, which is analogous to the limitation of claim 4, which is also not included in the rejection. Therefore, the newly amended claim 1 is not obvious over



Application No. 10/601,140  
Amendment dated November 28, 2006  
Reply to Office Action of June 30, 2006

31

Docket No.: 57764(71994)

Wengel in view of Recker. As the remaining claim in the rejection is all dependent, on the now allowable independent claim 92, it is also not obvious over Wengel in view of Recker. Therefore, the rejection of claims 92 and 93 under 35 U.S.C. §103(a) is overcome.

The Examiner has rejected claims 110-113 under 35 U.S.C. §103(a) as being unpatentable over Wengel in view of Skouv and Alizon (US Patent 5,310,651). Applicants have amended claim 110 to include the limitations of claim 12, which is not included in the rejection. Therefore, the newly amended claims 1-2 and are not obvious over Wengel in view of Skouv and Alizon. As the remaining claims in the rejection are all dependent, either directly or indirectly on the now allowable claim 110, they are also not obvious over Wengel in view of Skouv and Alizon. Therefore, the rejection of claims 110-113 under 35 U.S.C. §103(a) is overcome.

The Examiner has rejected claims 114-119 under 35 U.S.C. §103(a) as being unpatentable over Wengel et al (WO99/14226) in view of Skouv (US Patent 6,303,315) and Alizon (US Patent 5,310,651) as defined by Sambrook. Claims 114-119 are dependent on Claim 110. Claim 110 has been amended to include the limitation of claim 12, the limitations of which are not taught or suggested by the references. Therefore claims 114-119 are not obvious over Wengel in view of Skouv and Alizon as defined by Sambrook. Therefore, the rejection of claims 114-119 under 35 U.S.C. §103(a) is overcome.

The Examiner has rejected claims 136-138 under 35 U.S.C. §103(a) as being unpatentable over Wengel further in view of Squirrell (US Patent 5,837,465). Claims 136-138 are dependent on Claim 1. Claim 1 has been amended to include the limitations of claim 12, the limitations of which are not taught or suggested by the references. Moreover, the claim 1 has been amended to include the limitation of the sample being treated in a buffer comprising a chaotropic agent, which is analogous to the limitation of claim 4, the limitations of which are not taught or suggested by the references. Therefore, claims 136-138 are not obvious over Wengel further in view of Squirrell and the rejection of claims 136-138 under 35 U.S.C. §103(a) is overcome.

Application No. 10/601,140  
Amendment dated November 28, 2006  
Reply to Office Action of June 30, 2006

32

Docket No.: 57764(71994)

In view of the forgoing amendments arguments, Applicants submit that all of the claims are not obvious in view of the references cited and respectfully request the rejection of claims 1-2, 4, 13-15, 17, 22, 25-26, 28, 44-52, 54-67, 69-73, 77-80, 90, 92-93, 110-119, 127-137, and 139-140 under 35 U.S.C. §103(a) be withdrawn.

A petition has also been filed herewith requesting a two (2) month extension of time to November 30, 2006, to respond to the above referenced Office Action. Applicants also conditionally petition for a further extension time to provide for the possibility that such a petition is required. As indicated below, please charge Deposit Account No. 04-1105 for the required fee.

In view of the above amendment, applicant believes the pending application is in condition for allowance. Any additional fee occasioned by this paper may be charged, or overpayment credited to, Deposit Account No. 04-1105.

Dated: November 30, 2006

Respectfully submitted,

By 

Stephana E. Patton

Registration No.: 50,373

EDWARDS ANGELL PALMER &amp; DODGE LLP

P.O. Box 55874

Boston, Massachusetts 02205

(617) 439-4444

Attorneys/Agents For Applicant